AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) A method for driving a motor, the method comprising:

a constant identification step in which an inverter having an automatic tuning function for identifying a motor constant of a motor or a program of said inverter is used to identify a motor constant and a parameter for starting said motor, said constant identification step including forcedly applying a voltage to said motor for activation and rotation, and said motor constant including a phase resistance component, an inductance component, and a counter-electromotive voltage constant of said motor; and

an inverter control step in which said inverter or said program uses said motor constant obtained in said constant identification step to operate said motor at an efficient operating point of said motor, wherein said motor is a synchronous machine and is driven by said inverter using said identified motor constant.

2. (Previously Presented) The method according to claim 1, wherein said motor is driven while monitoring variation in a counter-electromotive voltage constant obtained in said constant identification step.

3. (Canceled)

4. (Canceled)

5. (Previously Presented) A method for driving a motor, the method comprising:

a constant identification step in which an inverter having an automatic tuning function for identifying a motor constant of a motor or a program of said inverter is used to identify a motor constant and a parameter for starting said motor, said constant identification step including forcedly applying a voltage to said motor for activation and rotation, and said motor constant including a phase resistance component, an inductance component, and a counter-electromotive voltage constant of said motor;

an inverter control step in which said inverter or said program uses said motor constant obtained in said constant identification step to operate said motor at an efficient operating point of said motor, wherein said motor is a synchronous machine and is driven by said inverter using said identified motor constant;

a storing step, in which an operating parameter extracted in an operating specifications evaluation step is stored in a server as numerical data via the Internet; and

a specifications decision step, in which operating specifications of said motor are determined based on said operating parameter stored in said server.

6. (Previously Presented) A method for driving a motor, the method comprising:

a constant identification step in which an inverter having an automatic tuning function for identifying a motor constant of a motor or a program of said inverter is used to identify a motor constant and a parameter for starting said motor, said constant identification step including forcedly applying a voltage to said motor for activation and rotation, and said motor constant including a phase resistance component, an inductance component, and a counter-electromotive voltage constant of said motor;

an inverter control step in which said inverter or said program uses said motor constant obtained in said constant identification step to operate said motor at an efficient operating point of said motor, wherein said motor is a synchronous machine and is driven by said inverter using said identified motor constant;

a performance evaluation step in which a first motor is driven by said inverter or said program of said inverter to evaluate operating performance of said first motor; and

a motor specifications decision step in which the specifications of a second motor are determined so as to improve the operating performance of a product containing said second motor on the basis of the evaluation results of the performance of said first motor obtained in said performance evaluation step, wherein said first motor is an induction motor or a rectangular wave drive permanent magnet motor, and said second motor is a sine wave drive permanent magnet motor,

said first motor being exchanged with said second motor in said motor specifications decision step.

7. (Previously Presented) A method for driving a motor, the method comprising:

a constant identification step in which an inverter having an automatic tuning function for identifying a motor constant of a motor or a program of said inverter is used to identify a motor constant and a parameter for starting said motor, said constant identification step including forcedly applying a voltage to said motor for activation and rotation, and said motor constant including a phase resistance component, an inductance component, and a counter-electromotive voltage constant of said motor;

an inverter control step in which said inverter or said program uses said motor constant obtained in said constant identification step to operate said motor at an efficient operating point of said motor, wherein said motor is a synchronous machine and is driven by said inverter using said identified motor constant;

a performance evaluation step in which a first motor is exchanged with a second motor, and said first motor is driven by said inverter for identifying a motor constant of said first motor, so as to evaluate the operating performance of said first motor;

a motor specifications decision step in which the specifications of said second motor are determined so as to improve the operating performance of a product containing said second motor on the basis of the evaluation results of the performance of said first motor obtained in said performance evaluation step; and

a price calculation step in which a price corresponding to electric power consumption is calculated on the basis of a difference between power consumption data obtained when using a motor having specifications determined in said motor specifications decision step and current power consumption data, wherein said price reflects on a charge for the provision of said inverter and said motor.

8. (Previously Presented) The method according to claim 1, wherein said motor is driven by said inverter by position sensor-less.

9. (Previously Presented) The method according to claim 1, wherein said inverter having the automatic tuning function for identifying the motor constant of said motor or the program of the inverter drives said motor, and the efficiency of said motor is monitored relative to said identified motor constant during operation.

10. (Previously Presented) The method according to claim 1, wherein said inverter having the automatic tuning function for identifying the motor constant of said motor or the program of the inverter is provided at the start of a service contract associated with said motor.

11. (Previously Presented) A method for deciding the specifications of a motor comprising:

an operating specifications evaluation step in which a driving device for identifying a motor constant of a permanent magnet motor and a sample motor for obtaining operating conditions are provided to a user of said motor, and said sample

motor installed in a product is driven by said driving device to evaluate operating specifications;

a specifications decision step in which the operating specifications of said permanent magnet motor to be supplied are determined on the basis of an operating parameter extracted in said operating specifications evaluation step;

an operating parameter storing step in which the operating parameter extracted in said operating specifications evaluation step is stored in a server as numerical data through communication means including the Internet; and

a specifications decision step, in which the operating specifications of said permanent magnet motor are decided based on said operating parameter stored in said server.

12. (Cancelled)

13. (Previously Presented) A method for providing a compressor version-up service comprising:

an operating specifications evaluation step in which a driving device for identifying a motor constant of a permanent magnet motor is provided to a user of a compressor having said permanent magnet motor installed therein, and said driving device drives said permanent magnet motor installed in said compressor to extract a motor constant of said permanent magnet motor including a counter-electromotive voltage constant;

an efficiency monitoring step in which the efficiency of a product is monitored based on variation in said motor constant of said permanent magnet

motor obtained in said operating specifications evaluation step, said compressor with said permanent magnet motor being installed in said product; and

an efficiency reduction reporting step in which an efficiency improvement measure including such as the timing of exchanging said compressor is reported by an indicator, when the efficiency of said product obtained in said efficiency monitoring step is reduced.

14. (Previously Presented) The method for providing a compressor version-up service according to claim 13, wherein said indicator reporting reduction in the efficiency includes a lamp.

15. (Previously Presented) A method for providing an energy saving service using a driving device of a permanent magnet motor comprising:

a storing step, in which an operating parameter extracted in an operating specifications evaluation step is stored in a server as numerical data via the Internet;

a specifications decision step in which operating specifications of said permanent magnet motor are determined based on said operating parameter stored in said server;

a driving device provision step in which a driving device which can drive any permanent magnet motor with different operating specifications is provided on the basis of a service contract of a user of a product having said permanent magnet motor; and

a product upgrade step in which said driving device controls the drive of said permanent magnet motor so as to improve the performance of the product with said permanent magnet motor, to upgrade the product with said permanent magnet motor.

16. (Previously Presented) A method for providing an energy saving service using a driving device of a permanent magnet motor comprising:

a storing step, in which an operating parameter extracted in an operating specifications evaluation step is stored in a server as numerical data via the Internet;

a specifications decision step in which operating specifications of said permanent magnet motor are determined based on said operating parameter stored in said server;

a driving device provision step in which a driving device which can drive any permanent magnet motor with different operating specifications is provided on the basis of a service contract of a user of a product having said permanent magnet motor; and

a motor supply step in which the driving device provided in said driving device provision step drives a plurality of permanent magnet motors having different operating specifications, and a motor to be used in the product is determined on the basis of the evaluation results of the performance of products by an identical driving device.

17. (Previously Presented) A method for providing an energy saving service using a driving device of a permanent magnet motor comprising:

a storing step, in which an operating parameter extracted in an operating specifications evaluation step is stored in a server as numerical data via the Internet;

a specifications decision step in which operating specifications of said permanent magnet motor are determined based on said operating parameter stored in said server;

a driving device provision step in which a driving device of a permanent magnet motor which can drive any permanent magnet motor with different operating specifications by identifying a motor constant is provided to a user of a permanent magnet motor to manufacture a product with said permanent magnet motor; and

a motor provision step in which said driving device drives said permanent magnet motor of said product, to provide a permanent magnet motor coinciding with product specifications required by said user.

18. (Previously Presented) A method for providing an energy saving service using a driving device of a permanent magnet motor comprising:

a storing step, in which an operating parameter extracted in an operating specifications evaluation step is stored in a server as numerical data via the Internet;

a specifications decision step in which operating specifications of said permanent magnet motor are determined based on said operating parameter stored in said server;

a driving device provision step in which a driving device which can drive any permanent magnet motor with different operating specifications by identifying a motor constant is provided on the basis of a service contract to a user of a product with said permanent magnet motor; and

a motor specifications decision step in which the operating specifications of a motor to be used in the product are decided on the basis of the evaluation results of the performance of said product, said driving device provided in said driving device provision step driving said permanent magnet motor in said product.

19. (Previously Presented) A method for providing an energy saving service using a driving device of a permanent magnet motor comprising:

a storing step, in which an operating parameter extracted in an operating specifications evaluation step is stored in a server as numerical data via the Internet;

a specifications decision step in which operating specifications of said permanent magnet motor are determined based on said operating parameter stored in said server;

a driving device provision step in which a driving device which can drive any permanent magnet motor with different operating specifications is provided on the basis of a service contract to a user of a product having said permanent magnet motor; and

a motor specifications decision step in which the operating specifications of a motor to be used in the product are decided on the basis of the evaluation results of the performance of said product, the driving device provided in said driving device provision step driving said permanent magnet motor in said product, wherein a price is calculated on the basis of a difference between power consumption data in the case of using the permanent magnet motor decided in said motor specifications decision step and current power consumption data, and said price reflects a charge for the provision of said driving device and said permanent magnet motor.

20. (Previously Presented) A method for exchanging a compressor comprising:

an operating specifications evaluation step in which, when a motor-driven old compressor used in a refrigeration cycle is exchanged for a new compressor, an inverter for identifying a motor constant of a synchronous motor of an alternative compressor with different operating specifications is provided together with said alternative compressor, and said inverter drives said synchronous motor of said alternative compressor to operate said refrigeration cycle, thereby extracting a motor constant of said synchronous motor including a counter-electromotive voltage constant;

a step of operating said refrigeration cycle in which said inverter drives said alternative compressor by use of the motor constant of said synchronous motor obtained in said operating specifications evaluation step, wherein said alternative compressor is used in an emergency measure until said new compressor is used;

a storing step, in which an operating parameter extracted in an operating specifications evaluation step is stored in a server as numerical data via the Internet; and

a specifications decision step, in which operating specifications of said synchronous motor are determined based on said operating parameter stored in said server.

21. (Currently Amended) A freezing/air conditioning device comprising:

a permanent magnet motor operated at variable speed by an inverter having an automatic tuning function or a program of the inverter, the inverter being able to identify a motor constant of a motor;

a compressor driven by said permanent magnet motor, for discharging a refrigerant circulating through a refrigeration cycle; and

a monitor device for monitoring performance such as ~~the range of output or~~ a reduction in efficiency by determining said motor constant identified during operation, wherein reduction in the efficiency is reported by an alarm.

22. (Previously Presented) The method according to claim 1, wherein in said constant identification step, a direct-current voltage is applied from said inverter so as to lock the motor, and the resistance component is identified from the resulting current.

23. (Previously Presented) The method according to claim 1, wherein in said constant identification step, a pulse voltage with a high frequency is applied to

the motor, and the inductance component is identified from the applied pulse voltage and the detected pulse current.

24. (Previously Presented) The method according to claim 1, wherein in said constant identification step, the counter-electromotive voltage constant is calculated by use of a voltage current equation of the motor.